



Think **that** can go down the drain!

Think Again.



CITY OF WILSON
Wastewater Collection and Treatment System Report
Fiscal Year 2020-21



"I've never had a clog, so there's no problem!"

Wishful thinking! Just because grease makes it down the drain doesn't mean it isn't building up in your pipes and sewer lines. Over time, it can cause a nasty clog and sewer will backup or overflow!

What is FOG?

FOG stands for Fats, Oils, and Grease that get into the sewers and cause problems for the wastewater treatment system.



Some common sources of FOG include:

- Animal fats
- Fatty food scraps
- Lard
- Cooking oil
- Shortening
- Butter or margarine
- Gravy and other sauces
- Creamy or oily sauces
- Salad dressings
- Marinades
- Milk fat
- Dairy products



Pipe clogged with FOG

How FOG Clogs Pipes

Just as fat accumulates and causes blockages in human arteries, oil and grease solidifies and accumulates in household pipes, restricting the flow of wastewater and causing sewer backups and overflows.

How it starts:

FOG separates from other liquids as it goes down your drain. The FOG cools and sticks to household pipes and sewer pipes.

A matter of time:

Day by day, pipes become progressively clogged and sewage flow becomes restricted.

Odor can be an early sign of problems:

As wastewater flow slows in the pipe due to restrictions, it allows sewer gases to increase. This can lead to corrosion of pipes and manholes. When these corrode, it can allow sewer gases to escape, causing odor concerns.

Nowhere to go but back:

The clogged pipe eventually backs up and can flood your home with wastewater or it can cause it to overflow onto the street.

A threat to the environment:

The untreated wastewater can then flow to local waterways, potentially harming the environment.

The cost to ratepayers:

Not only is FOG costly to the environment, it is also costly to ratepayers, as the costs of repairing clogged pipes must be passed on to customers.

Some major misconceptions can lead to big clogs in your sewer pipes

"Hot water dissolves grease!"

Not true! Using hot water and soap to "dissolve" oil and grease and wash it down the drain will not work. Grease will still stick to pipes after it cools.

"My in-sink disposal takes care of grease!"

Also not true! A garbage disposal won't make fatty and greasy food scraps disappear. Once they've passed the disposal, they can still clog the pipe.

"It's okay to pour liquid oils down the drain!"

False! Liquid cooking oils float on water and easily adhere to sewer pipes. The oily film can collect food particles and other solids that will create a blockage.



Stop the Clog!

The majority of sewer backups and overflows caused by FOG originate in residential areas. You can help prevent clogs by learning about FOG and how to dispose of it.

By following three simple steps, you can make sure your pipes keep flowing properly:

What should you do? It's easy!

CAN IT! Once cooled, pour leftover oils and grease into a sturdy container, like an empty coffee can or glass jar and discard it in a trash can.

SCRAPE IT! Before washing, scrape out fats, oils and grease residuals from pots, pans and dishes into the trash can.

TRASH IT! Put fatty and greasy food scraps in the garbage, not the drain.

MISSION STATEMENT

“Protecting our Environment and Water Quality, through Teamwork and Excellent Service, now and for future generations.”

HOMINY CREEK WATER RECLAMATION FACILITY (WRF)

The WRF is located in Wilson at 3100 Stantonsburg Road. It is a state-of-the-art regional treatment plant that processes wastewater for approximately 20,300 metered customers and a service population of approximately 52,500. The City of Wilson also treats wastewater from the Town of Black Creek, the Town of Lucama and the Town of Sims.

The term water reclamation defines the treatment or processing of wastewater to make it reusable with specific treatment reliability. Reclaimed water must also comply with very stringent water quality criteria. The term water reuse defines the use of treated wastewater for beneficial uses, such as agricultural irrigation and industrial cooling. The City of Wilson is committed to reusing reclaimed water in areas that drinking water is not needed such as irrigation water for Wedgewood Golf Course, the Burt Gillette Athletic Complex and industrial process/cooling water. The reclaimed water system is part of the City's water conservation plan.



This report provides information concerning the City of Wilson's wastewater collection and treatment system performance for July 1, 2020 to June 30, 2021 as required in the North Carolina Clean Water Act of 1999 (House Bill 1160). If you have any questions about the information contained in this report, or would like to learn more about your wastewater collection system or the Hominy Creek Water Reclamation Facility, please call (252) 399-2492.

TABLE DEFINITIONS & KEY

< - less than

> - greater than

MGD (Million Gallons per Day) - a unit of measurement for flow volume.

NTU (Nephelometric Turbidity Units) - a unit of measurement for Turbidity. The lower the value, the clearer the water.

PPM (Parts per Million) - a unit of measurement. Parts per million compares to 1 minute in 2 years.

PPB (Parts per Billion) - a unit of measurement. Parts per billion compares to 1 minute in 2,000 years.

SU (Standard Units) - a unit of measurement for pH.

Ammonia - one of several forms of nitrogen that exist in aquatic environments. Excessive ammonia can cause toxic effects to aquatic life. Ammonia is measured in PPM.

BOD (Biochemical Oxygen Demand) - a required test that determines the amount of oxygen required by microorganisms to consume pollutants. BOD is measured in PPM.

Chronic Toxicity - a required test used to determine the potential effects of treated wastewater discharged into the receiving stream. The test ensures that treated wastewater discharged into surface waters does not negatively impact aquatic ecosystems.

DO (Dissolved Oxygen) - a required test used to determine the amount of oxygen that is present in water. It is a direct indicator of an aquatic resource's ability to support aquatic life. DO is measured in PPM.

FC (Fecal Coliform) - a required test used to determine the presence of disease causing organisms. FC are harmless but are used as indicators of other organisms (if FC are present others may be present). FC is measured as number of colonies per 100 milliliters of sample.

pH - a required test used to determine the hydrogen ion concentration in water. It is used to indicate basicity or acidity of a solution on a scale of 0 to 14, with pH 7 being neutral.

TN (Total Nitrogen) - a required test used to determine the sum of the different forms of nitrogen found in water, including nitrate, nitrite and ammonia. Nitrogen is a critical nutrient required for all life but elevated concentrations can result in excessive growth of algae and aquatic plants. TN is measured in PPM.

TP (Total Phosphorus) - a required test used to determine all the different forms of phosphorus found in water. Phosphorus is a critical nutrient required for all life but elevated concentrations can result in excessive growth of algae and aquatic plants. TP is measured in PPM.

TRC (Total Residual Chlorine) - a required test used to determine the total amount of remaining chlorine present in water. Chlorine is added to destroy or deactivate disease-producing microorganisms. Excess residual chlorine may cause adverse effects to aquatic life. TRC is measured in PPB.

TSS (Total Suspended Solids) - a required test that measures the amount of suspended solids in a sample. TSS are measured in PPM.

Turbidity - a required test that measures clarity of water. It is used to indicate water quality and filtration effectiveness. Turbidity is measured in NTU.

NPDES PERMIT COMPLIANCE (NC0023906)

The WRF was significantly impacted by the above normal rainfall experienced during this past winter and spring. Inflow/Infiltration caused by the extremely wet weather conditions contributed to two (2) permit limit exceedances (shown in red below). All other permit limits were in compliance.

PLANT PERFORMANCE

Pollutant	Concentration	Pollutant	Concentration
Ammonia Nitrogen	PPM	Flow	MGD
Average	0.06	Average	11.00
Permit Limit	1.0/3.0 (summer - monthly/weekly)	Permit Limit	14.00 (monthly)
	2.0/6.0 (winter - monthly/weekly)	Exceedance - January 2021	15.15 (monthly)
		Exceedance - February 2021	17.92 (monthly)
Biochemical Oxygen Demand	PPM	pH	SU
Average	0.8	Minimum - Maximum	6.0 - 8.7
Permit Limit	5.0/7.5 (summer - monthly/weekly)	Permit Limit	Within 6.0 - 9.0 (daily)
	10.0/15.0 (winter - monthly/weekly)	Total Nitrogen	Lbs/Yr
Chronic Toxicity		Pounds Discharged	80,727
Test Performed Quarterly	Passed all	Permit Limit	157,886
Permit Limit	Pass or Fail	Total Phosphorus	PPM
Dissolved Oxygen	PPM	Average	0.20
Average	9.2	Permit Limit	2.00 (quarterly)
Permit Limit	>7.0 (daily)	Total Residual Chlorine	PPB
Fecal Coliform	Colonies/100 ml of sample	Average	0.32
Average	3	Permit Limit	18.0 (daily)
Permit Limit	200/400 (monthly/weekly)	Total Suspended Solids	PPM
		Average	0.1
		Permit Limit	30.0/45.0 (monthly/weekly)

REUSE PERMIT COMPLIANCE (WQ0018709)

The WRF was compliant with all Reuse permit limits this year.

PLANT PERFORMANCE

Pollutant	Concentration	Pollutant	Concentration
Ammonia Nitrogen	PPM	Flow	MGD
Average	0.21	Average	0.21
Permit Limit	4.0/6.0 (monthly/daily)	Permit Limit	4.1 (monthly)
Biochemical Oxygen Demand	PPM	Total Suspended Solids	PPM
Average	3.2	Average	0.32
Permit Limit	10.0/15.0 (monthly/daily)	Permit Limit	5.0/10.0 (monthly/daily)
Fecal Coliform	Colonies/100 ml	Turbidity	NTU
Average	1	Average	0.53
Permit Limit	14/25 (monthly/daily)	Permit Limit	10.0 (daily)

SANITARY SEWER OVERFLOWS (SSOs)

Sanitary sewer overflows (SSOs) occur when untreated sewage is discharged into the environment prior to reaching the sewer treatment facilities. These typically occur at manholes, pump stations, or broken sewer pipes. Infiltration/inflow (I/I) is unwanted water that enters the sewer collection system through deteriorating older pipes, leaking manholes, illegal connections such as roof drains, etc. During heavy rains, pipes can become overloaded from I/I and cause SSOs. Pipe stoppages caused by fats, oils, and grease can also lead to SSOs. Replacing and rehabilitating these lines and manholes reduces I/I into the sanitary sewer system, thus protecting the public health, improving treatment plant efficiency and reducing system maintenance. Generators provide emergency back-up power for pump stations and help prevent SSOs.



During fiscal year 2020-2021, the City of Wilson experienced five (5) reportable SSOs. The WRF treated 4.0 billion gallons of wastewater during this period.

October 12, 2020

3400 NC Hwy 42 W
Total: 3,600 gallons
Cause: Pipe Failure

November 12, 2020

Intersection of Beacon Street W & Park Avenue W
Total: 1,980 gallons
Cause: Infiltration/Inflow during heavy rain event

February 19, 2021

1300 Block of Canal Drive NW
Total: 5,500 gallons
Cause: Infiltration/Inflow during heavy rain event

November 12, 2020

1300 Block of Canal Drive NW
Total: 2,070 gallons
Cause: Infiltration/Inflow during heavy rain event

November 16, 2020

Intersection of Downing Road SW & Forest Hills Road SW
Total: 2,700 gallons
Cause: Pipe blockage due to debris & non-flushable wipes



Customers who observe a sanitary sewer overflow should report these as emergencies to the City of Wilson's Unified Communications Center at **(252) 399-2424**.

Cientes que observan un desbordamiento del drenaje sanitario, deben reportar estas situaciones de emergencia al centro de comunicaciones unificadas de la Ciudad de Wilson, al telefono **(252) 399-2424**.

DISPOSABLE DOES NOT MEAN FLUSHABLE

Flushing paper towels and other garbage down the toilet wastes water and can create sewer backups and SSOs. The related costs associated with these SSOs can be passed on to ratepayers. Even if the label reads "flushable", you are still **safer and more environmentally correct** to place the item in a trashcan.



DO NOT FLUSH



Partial list of items that should not be flushed

- ✗ Baby wipes, diapers
- ✗ Candy and other food wrappers
- ✗ Rubber items such as latex gloves
- ✗ Cigarette butts
- ✗ Clothing labels
- ✗ Sanitary napkins
- ✗ Rags and towels
- ✗ Cleaning sponges
- ✗ Hair
- ✗ Cotton swabs, medicated wipes (all brands)
- ✗ Toys
- ✗ Underwear
- ✗ Syringes
- ✗ Plastic items
- ✗ Disposable toilet brushes
- ✗ Aquarium gravel or kitty litter
- ✗ Tissues (nose tissues, all brands)

WHAT THE CUSTOMER CAN DO TO HELP

In order to help the City of Wilson continue a high standard of water quality and protection of the environment, please follow these simple steps:

DO NOT pour fats, oils, or grease from cooking down the drain – collect these items in a container and dispose of it in the garbage.

DO NOT use the toilet as a wastebasket – place a wastebasket in each bathroom for the disposal of solid waste, disposable diapers, condoms, and personal hygiene products that DO NOT belong in the sewer system.

DO NOT use the sink to dispose of food scraps – place food scraps in the garbage for disposal with solid wastes, or better yet, start a compost pile.

FOR MORE WATER QUALITY INFORMATION

City of Wilson – Water Resources
 (252) 399-2492
www.wilsonnc.org/water-resources

North Carolina Department of Environmental Quality
 (919) 733-2321
www.deq.nc.gov

U.S. Environmental Protection Agency
www.epa.gov

Lower Neuse Basin Association
www.lnba.net

N.C. Environmental Education
www.eenorthcarolina.org

U.S. Geological Survey
www.usgs.gov

River Guardian Foundation, Inc.
www.riverguardfdn.org

Sound Rivers
www.soundrivers.org

Water's Worth It
www.watersworthit.org

AFFILIATIONS

The City of Wilson Water Reclamation Division is affiliated with the following organizations:

- Water Environment Federation
- N.C. Water Quality Association
- N.C. Pretreatment Consortium
- American Water Works Association
- N.C. Water Environment Association
- N.C. Rural Water Association
- N.C. Water Works Association